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The Cenozoic strontium isotope curve has been interpreted as indicating progressively increasing silicate-rock weathering rates associated with continental uplift, primarily of the Himalayas and Tibetan Plateau. This continental uplift is thought to be a consequence of the collision of the Indian subcontinent with Asia. It has been proposed that the general cooling trend through the Cenozoic has been largely due to uplift-induced enhancement of silicate-rock weathering rates.

We have constructed a preliminary carbon budget for the Cenozoic, and have shown that the interpretation of the strontium isotope curve in terms of enhanced chemical weathering rates is inconsistent with both inferred rates of CO_2 degassing from the solid Earth and the inferred timing of uplift in Tibet and the Himalayas. Furthermore, the strontium in rivers draining the Tibetan plateau and the Himalayas is insufficient to account for the observed Cenozoic change in oceanic $^{87}Sr/^{86}Sr$ ratios.

Enhanced silicate-rock weathering on a global scale requires an enhanced supply of CO_2, else the atmospheric and oceanic reservoirs of CO_2 would be rapidly depleted. We have conducted a preliminary field study examining the Himalayan and Karakorum orogens as a potential metamorphic CO_2 source to the atmosphere. Our initial results indicate that metamorphic CO_2 releases associated with the India-Asia collision would not have been sufficient to supply the CO_2 required to account for proposed increases in chemical weathering rates.

Uplift, by increasing the exposed surface area of fresh rock, may enhance the ease with which rock is weathered, and hence may have an impact on atmospheric CO_2 content and climate. (However, if this mechanically weathered rock is rapidly transported to and buried in river deltas, enhanced mechanical erosion need not induce enhanced chemical weathering.)

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